FIG. 1A

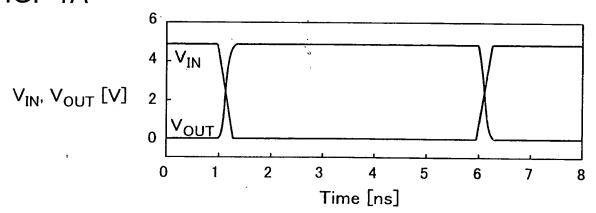


FIG. 1B

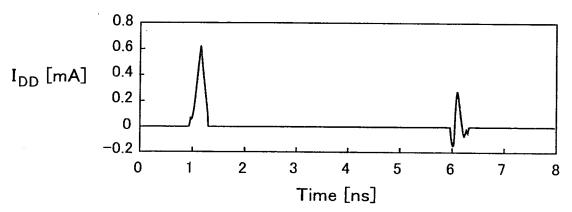


FIG. 1C

FIG. 1D

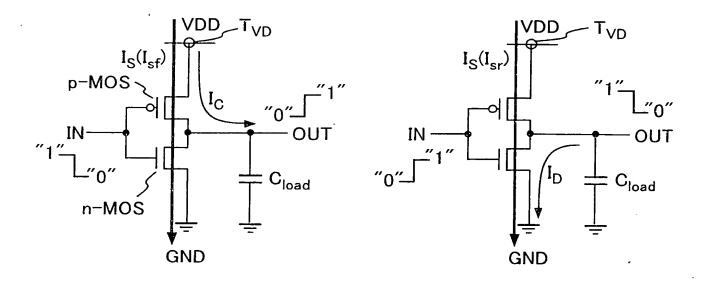


FIG. 2A

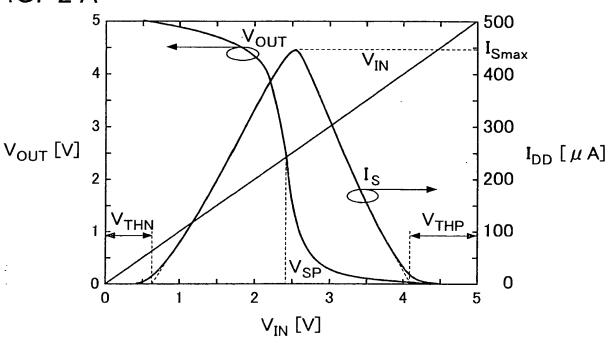


FIG. 2B

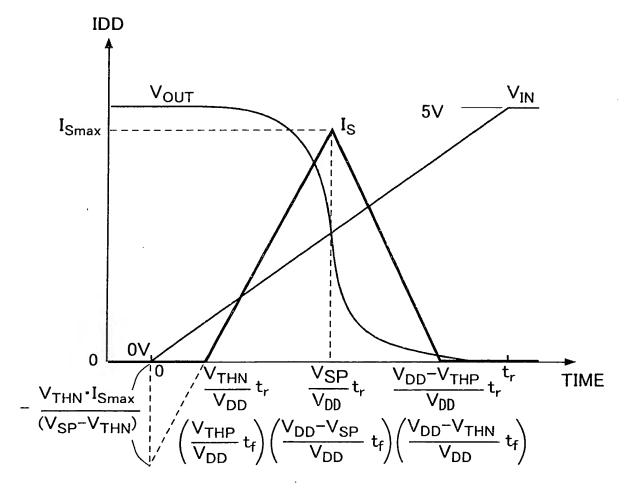


FIG. 3 A

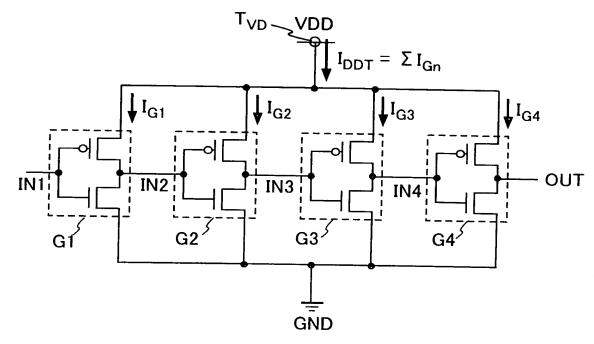


FIG. 3B

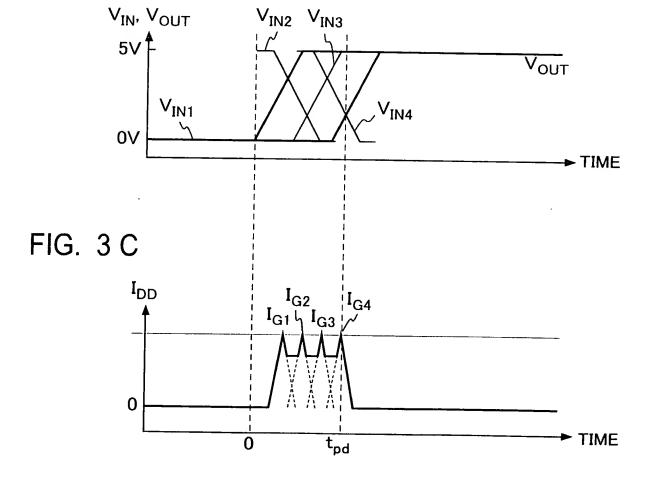
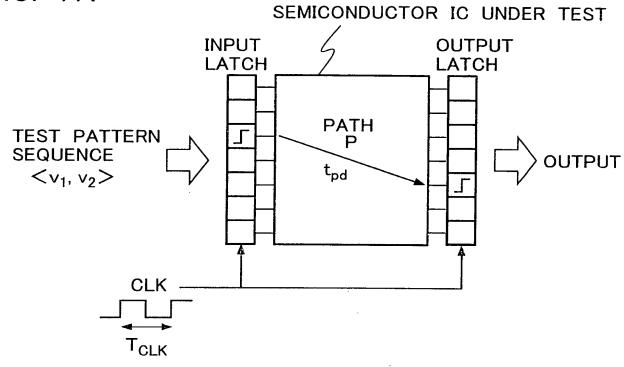
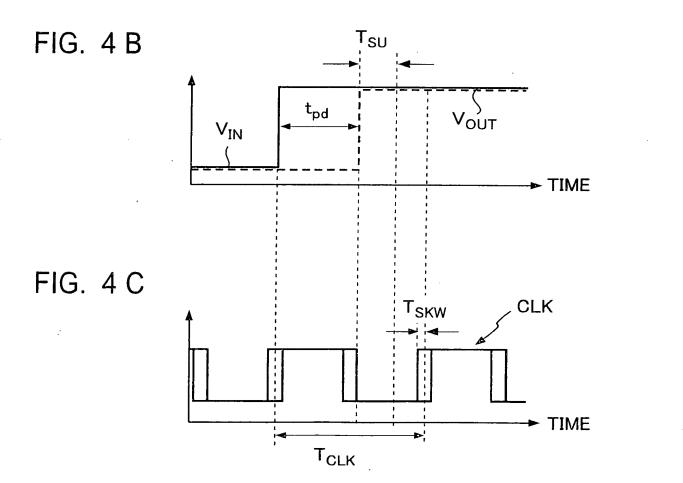
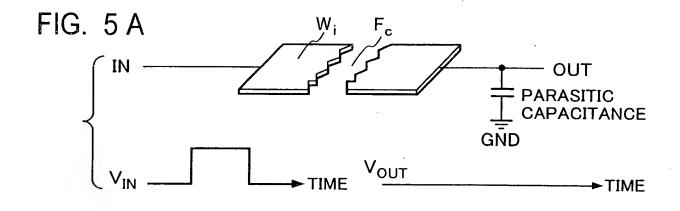
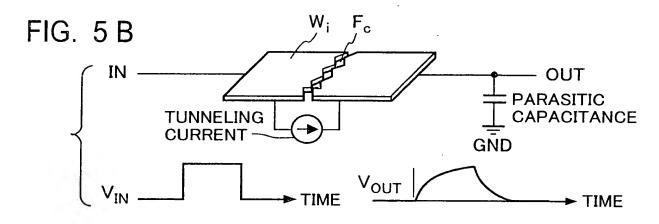


FIG. 4A









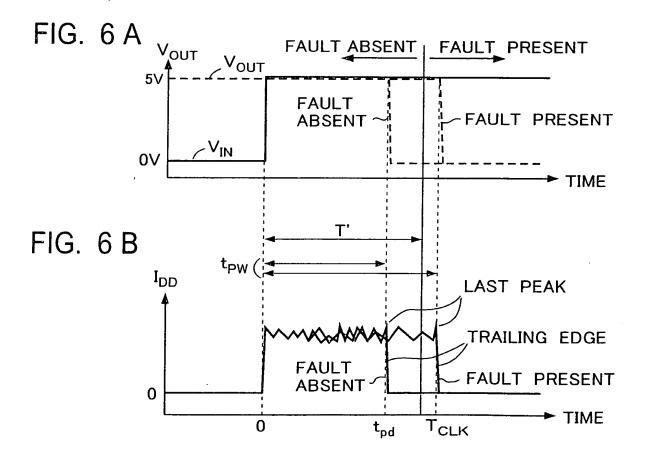
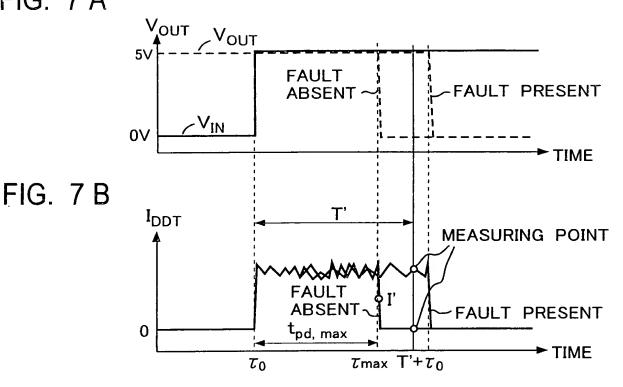


FIG. 7 A



FAULT ABSENT : $i_{DDT}(T'+\tau_0) \leq I'$ FAULT PRESENT : $i_{DDT}(T'+\tau_0) > I'$

FIG. 8

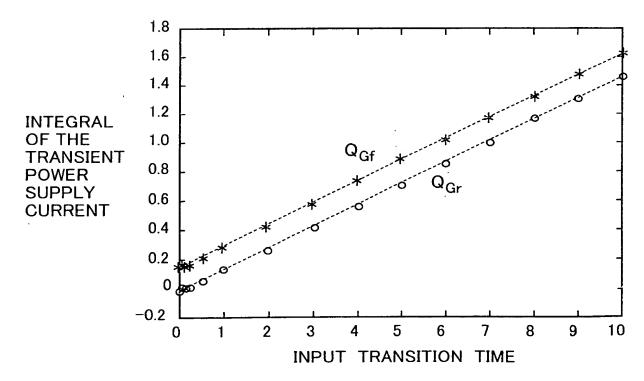


FIG. 9 A

FIG. 9B

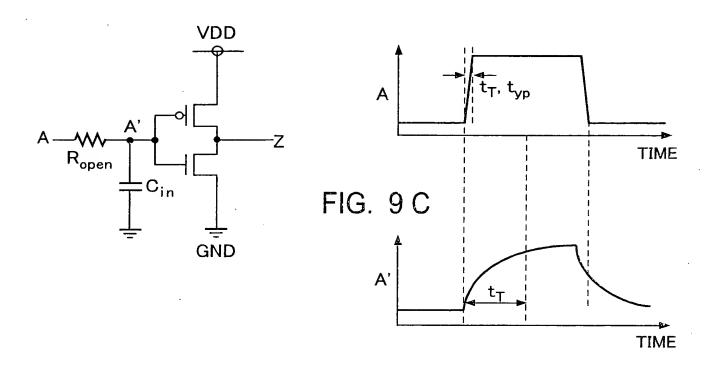


FIG. 10 1.6 INPUT PATTERNS = <"0", "1"> 1.4 1.2 1.0 Q_{DDT} [pC] 8.0 0.6 0.4 0.2 pg d $Q_{DDT, \ typ}$ 0 100 40 60 120 0 20 80 140 160 180 200 $\mathsf{R}_{\mathsf{open}}\; [\mathsf{k}\,\Omega\,]$

FIG. 11

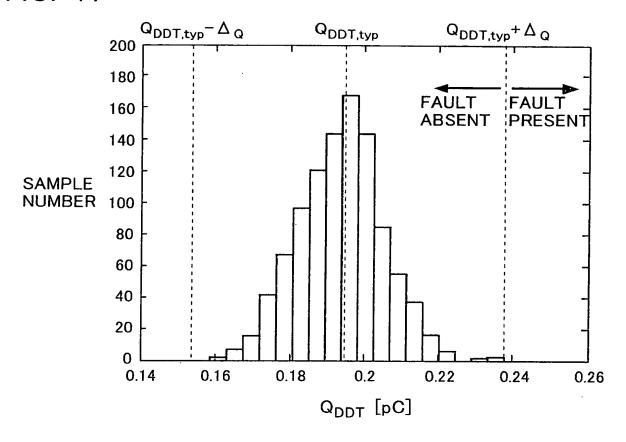


FIG. 12

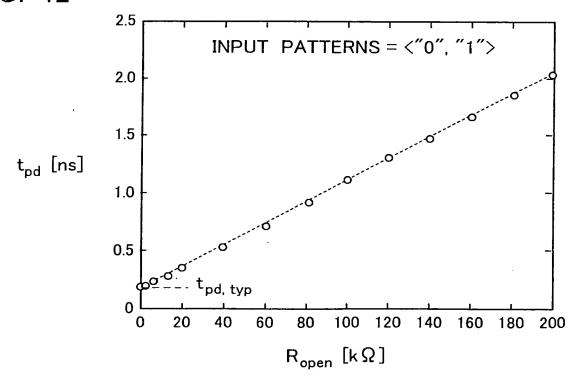


FIG. 13

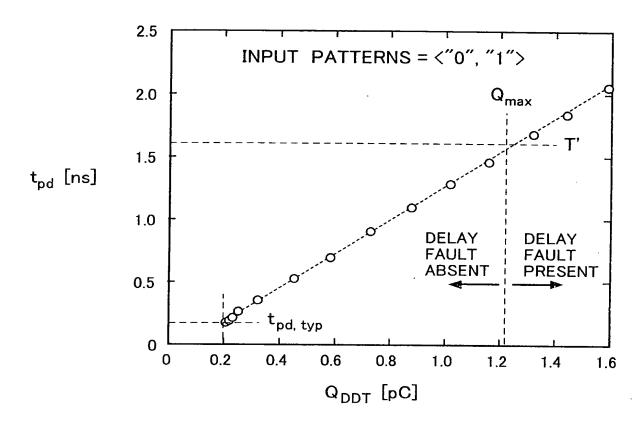


FIG. 14

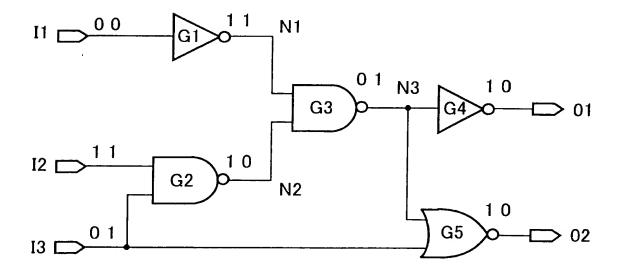


FIG. 15

					,									
FAULT-DETECTABLE	GAIE	G5	G2, G3, G4, G5	1	G2	1	G2, G3, G4	f	G2	G1, G3, G4, G5	G1, G3, G4	G1, G3, G4, G5	G1	
OUTPUT TERMINAL	02	ᄕ	ഥ	0	0	-	0	0	0	ᄔ	0	ᄔ	0	
OUTPUT TERMIN	0	-	ட	0	0	-	ᄔ	0	0	ц.	4	т	0	
4	N3	0	Z.	1	-	0	R	1	1	R	R	Я	1	
INTERNAL	N2	-	ட	-	ட	-	Щ	-	ட	-	1	1	0	••••
ZZ	N	-	-	0	0	, -		0	0	ഥ	щ	ட	щ	••••
7	13	Я	Я	R	Я	0	1	0	1	0	1	0	1	••••
INPUT TERMINAI	12	0	1	0	1	R	Ж	œ	Ж	0	0		_	••••
INPUT	11	0	0	-	1	0	0	-	-	22	œ	œ	æ	• • • •
TEST PATTERN SEQUENCE	IDENTIFIER	T1	Т2	Т3	T4	T5	Т6	Т7	Т8	T9	T10	T11	T12	••••

FIG. 16

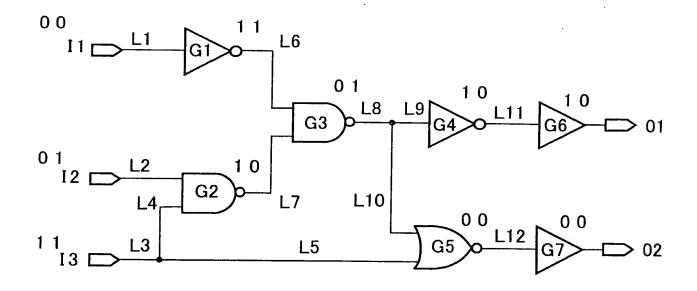
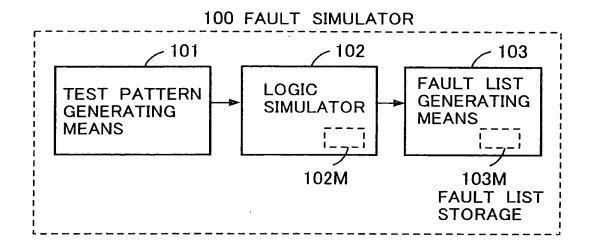
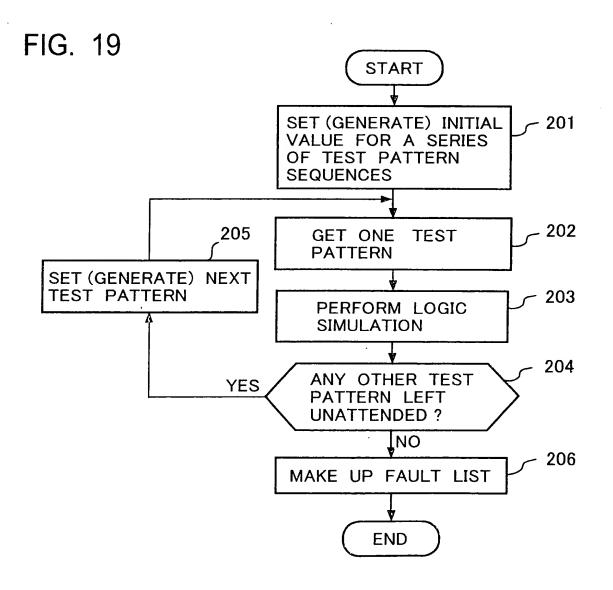


FIG. 17

I ⊢	INTERNAL SIGNAL LINE	L3, L5, L12	L3, L4, L5, L7, L8,	L9, L10, L11, L12	1	L3, L4	1	L2, L7, L8, L9, L11	1	L2	L1, L6, L8, L9,	L10, L11, L12	L1, L6, L8, L9, L11	L1, L6, L8, L9	L10, L11, L12		
OUTPUT TERMINAL	02	L	止		0	0	1	0	0	0	ட		0	L		0	•••
OUTPUT TERMINA	01	1	Ŧ		0	0	1	ч	0	0	4		ഥ	ட	!	0	•••
	12	ㅂ	L		0	0	1	0	0	0	ட		0	ட		0	•••
	11		ш		0	0	-	ᄔ	0	0	ட		ட	ட		0	• • •
N N	9 10 11	-	ட		0	0	-	Щ	0	0	ட		ட	ட		0	3
INTERNAL SIGNAL LINE	6	-	ш		0	0	1	ш	0	0	ட		ட	ட		0	
¥ Z	8	-	ı		0	0	1	ட	0	0	ட		ட	ഥ		0	•••
SIG	7	-	ш			щ	-	4	-	щ	-		-			0	
<u> </u>	9	-	1		0	0	-	-	0	0	ட		ч	ட		ட	•••
Ž	2	æ	Я		æ	Ж	0	1	0	-	0		1 1	0		-	•••
	4	α	ď		Ж	2	0	-	0	-	0		-	0		-	• • •
2	က	22	œ		8	œ	0	1	0	-	0		1	0		_	•••
	7	0	-		0	-	8	8	2	8	0		0	-		-	• • •
	-	0	0		←	-	0	0	-	-	α		œ	α	1	<u>م</u>	• • •
IAL	13	22	œ		2	~	0	-	0	-	0		-	0		-	
ן בּצ	12	0	_		0	-	~	2	œ	œ	0		0	-		-	• • •
INPUT TERMINAL	Ξ	0	0		-	-	0	0	-	-	œ		E	<u>~</u>		<u>م</u>	•••
TEST PATTERN SEQUENCE	IDENTIFIER	T1	Т2		Т3	T4	Т5	Т6	Τ7	Т8	£1		T10	Ξ		T12	• • •

FIG. 18





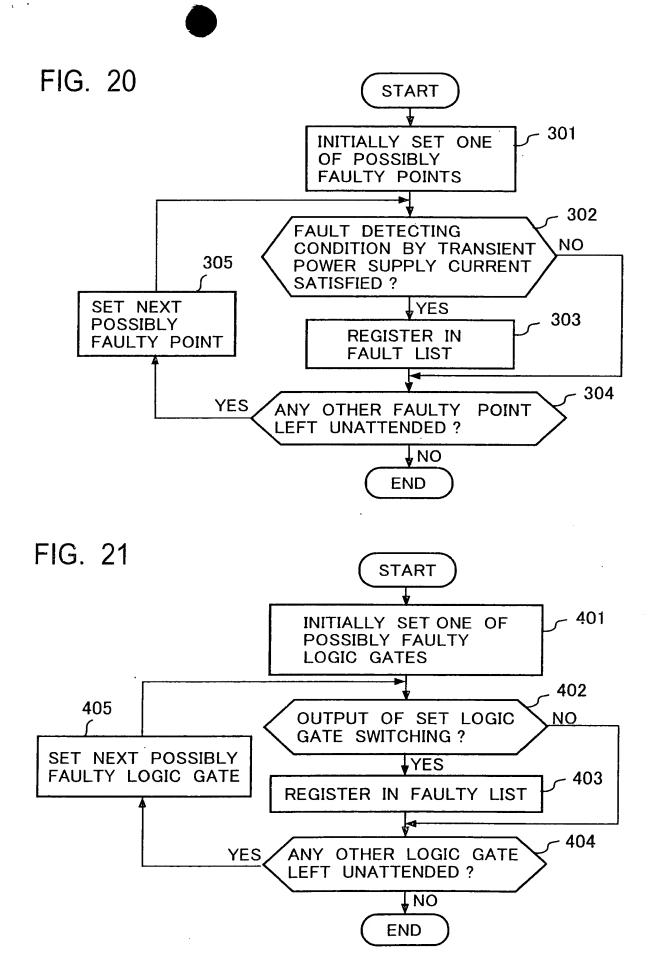


FIG. 22

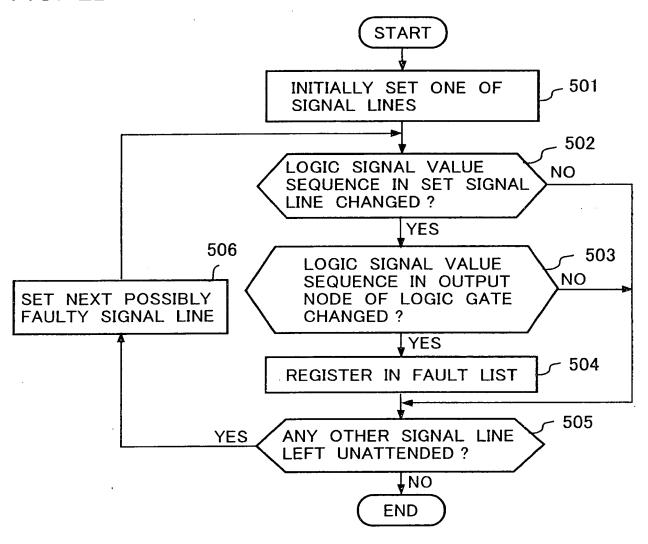


FIG. 23

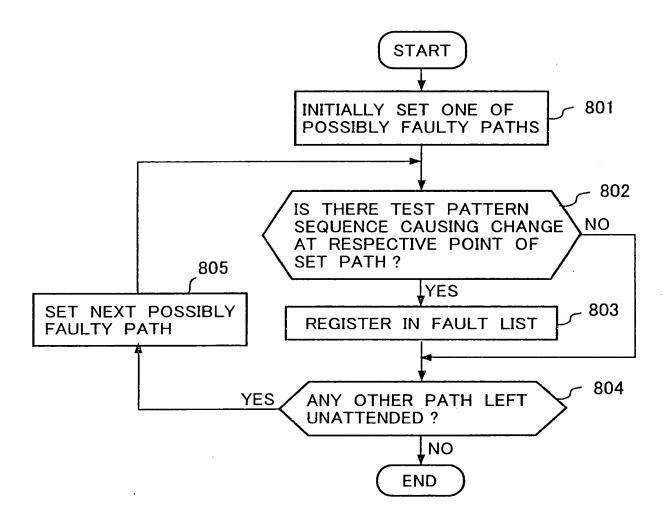


FIG. 24

FAULT-DETECTABLE	РАТН	<13, 02>	<13, N2, N3, O1>, <13, N2, N3, O2>	1	-	1	<12, N2, N3, O1>	-		<11, N1, N3, 01>, <11, N1, N3, 02>	<11, N1, N3, O1>	<11, N1, N3, O1>, <11, N1, N3, O2>		
OUTPUT TERMINAL	05	ட	iı.	0	0	-	0	0	0	Ē	0	ட	0	• • • •
95	01	1	LL.	0	0	1	Ŧ	0	0	ட	ட	Ŀ	0	• • • •
INTERNAL NODE	N3	0	<u>ح</u>	1	1	0	R	1	1	œ	œ	æ	-	••••
NAL	N2	-	ய	-	н	1	H.	1	Ъ	-	-	-	0	
INTER	N	1	-	0	0	1	1	0	0	LL	ъ	ட	Ŧ	••••
 	13	œ	œ	Ж	Я	0	1	0	1	0	٠,	0	+	• • • •
INPUT	12	0	-	0	-	Ж	Я	œ	æ	0	0	-	-	• • • •
	Ξ	0	0	-	0	0	0	-	-	œ	8	œ	2	••••
TEST PATTERN SEQUENCE	IDENTIFIER	Τ1	Т2	Т3	T4	T5	Т6	T7	T8	19	T10	T11 .	T12	••••

FIG. 25

TEST PATTERN INPUT	INPL	۲ E	NAI			Z	ER	\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \		SIG	N X	۲	INTERNAL SIGNAL LINE	叫		OUTPUT	DUTPUT	
ER	1 2 3	2	3	-	2	က	4	5	9	7	œ	6	10	7 8 9 10 11	12	-	2 2	РАТН
T1	0	0	В	0	0	~	~	~		_	 -	_		-	ш	_	ш	<13, L3, L5, L12, 02>
T2	0	-	α	0	-	<u>~</u>	œ	<u>α</u>		ш	ட	ட	ட	ட	ட	IL.	ш	<13, L3, L5, L12, 02> <13, L3, L4, L7, L8, L9, L11, 01> <13, L4, L7, L8,
T3	-	0	œ	-	0	2	œ	2	0	-		0	0	0	0	0	0	- LIU, LIZ, OI / -
T4	-	-	œ	-	_	œ	<u>~</u>	0	0	F 0 0	0	0	0	0	0	0	0	1
T5	0	8	0	0	ď	0	0	0	_ ;	_	_	-	-	-	-	_	_	ŀ
Т6	0	œ	1	0	2		-		-	ш	ᇤ	ш	ш	ш	0	11.	0	<12, L2, L7, L8, L9, L11, 01>
Т7	-	ď	0	-	œ	0	0	0	0 0 1		0	0	0	0	0	0	0	1
T8	-	œ	-	_	œ		-		0	ш	0	0	0	0	0	0	0	1
Т9	æ	0	0	~	0	0	0	0	止		ட	ш .	ᄕ	ш	ட	ഥ	L	<11, L1, L6, L8, L9, L11, 01> <11, L1, L6, L8, L10, L12, 02>
T10	Я	0	-	æ	0		-	-	ட	_	F	Ŧ	ш	ш	0	ш	0	<11. L1, L6, L8, L9, L11, 01>
T11	œ	-	0	œ	-	0 0		0	0 F 1		ட	ட	ч	ᄔ	ட	ட	ш	<11, L1, L6, L8, L9, L11, O1>
T12	œ	-	1	8	-	-	-		ᄔ	0	0	0	0	0	0	0	0	1
	•••	• • •		•••	• • •	• • •					• • •		• • •	• • •	•••	•••	•••	•••
														200	A CONTRACTOR			

FIG. 26

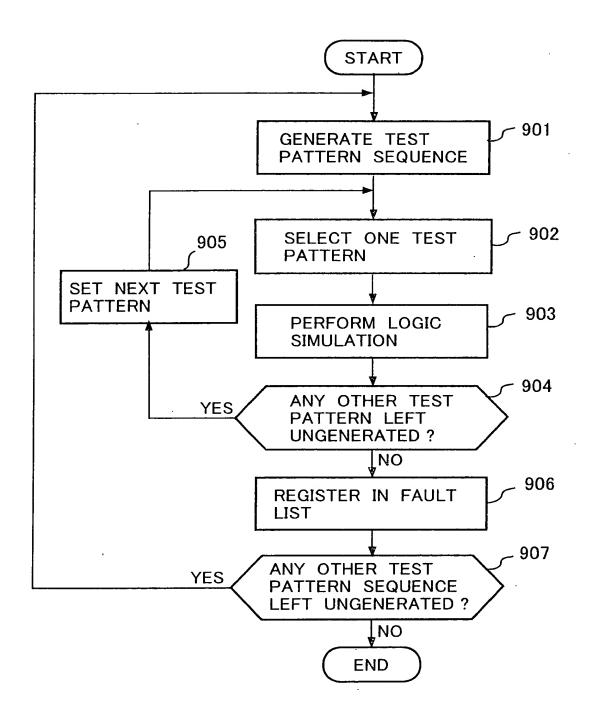


FIG. 27

